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Kopie

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Operating Instructions
Bedienungsanleitung
Mode d'emploi
Istruzioni per l'uso

MULTI-MIXING AMPLIFIER
MEHRFACH-MISCHVERSTÄRKER
AMPLIFICATEUR MULTI-MIXEUR
AMPLIFICATORE DI MIXAGGIO MULTIPLO

MA-100

English; Page 1
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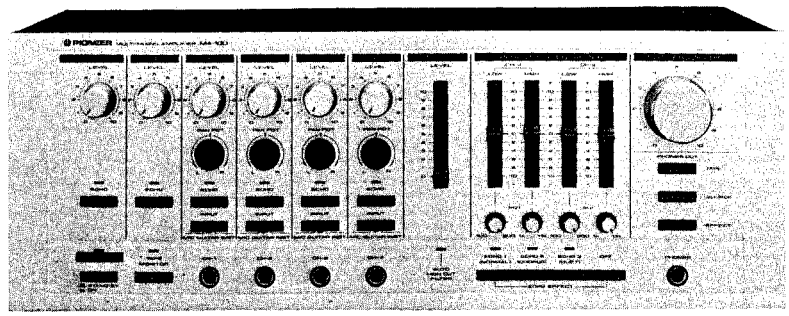


ENGLISH
DEUTSCH
FRANÇAIS
ITALIANO

Thank you for buying this Pioneer product.
Please read through these operating instructions and then you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.
These operating instructions are based on the model HE, and they can be used for the HB, KU, KC, R, R/G models. The differences between the models are given below.

HE model:
For Europe ('HE' stamped on packing case): power line voltage is a.c. 220 volts ∿.

HB model:
For U.K. ('HB' stamped on packing case): power line voltage is a.c. 240 volts ∿.

KU and KC models:
For U.S.A. and Canada ('KU' or 'KC' stamped on packing case): power line voltage is AC 120 volts.

R and R/G models:
For destinations excluding above (R or R/G stamped on packing case); A 2-point (a.c. 110 V — 120 V/220 V — 240 V) voltage selector switch is provided.

IMPORTANT NOTICE [For KU and KC models]

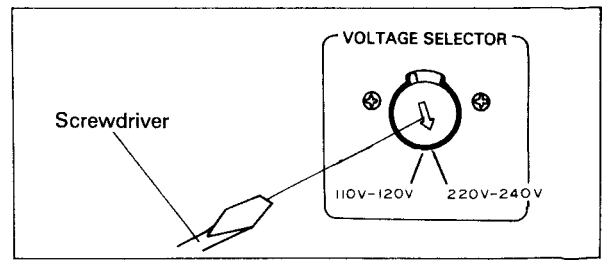
The serial number for this equipment is located on the rear panel. Please write this serial number on your enclosed warranty card and keep in a secure area. This is for your security.

KU (for U.S.A.) and KC (for Canada) models are not provided with LINE VOLTAGE SELECTOR switch.

LINE VOLTAGE SELECTOR SWITCH

Only R and R/G models are provided with this switch but KU, KC and other models (HE, HB) are not provided with this switch
You will find the line voltage selector switch on the rear panel. This switch has positions for 110 V — 120 V and 220 V — 240 V power sources. Before your model is shipped from the factory , the switch is set to the power requirements of the destination; nevertheless, you should check that it is set properly before plugging the power cord into the AC outlet. If the voltage is not properly set or if you move to an area where the voltage requirements differ, adjust the selector switch as follows. Before adjusting, disconnect the power cord.

1. Prepare a medium size screwdriver.
2. Insert the screwdriver into the arrow on the voltage selector and adjust so that the tip of the arrow points to the voltage value of your area.



WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

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SAFETY INSTRUCTIONS [FOR KU MODEL]

READ INSTRUCTIONS — All the safety and operating instructions should be read before the appliance is operated.

RETAIN INSTRUCTIONS — The operating instructions should be retained for future reference.

HEED WARNING — All warnings on the appliance and in the operating instructions should be adhered to.

FOLLOW INSTRUCTIONS — All operating and use instructions should be followed.

WATER AND MOISTURE — The appliance should not be used near water — for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.

LOCATION — The appliance should be installed in a stable location.

WALL OR CEILING MOUNTING — The appliance should not be mounted to a wall or ceiling.

VENTILATION — The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

HEAT — The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.

POWER SOURCES — The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

POWER-CORD PROTECTION — Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

CLEANING — The appliance should be cleaned only with a polishing cloth or a soft dry cloth. Never clean with furniture wax, benzine, insecticides or other volatile liquids since they may corrode the cabinet.

POWER LINES — An outdoor antenna should be located away from power lines.

NONUSE PERIODS — The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

OBJECT AND LIQUID ENTRY — Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

DAMAGE REQUIRING SERVICE — The appliance should be serviced by Pioneer authorized service center or qualified service personnel when:

- The power-supply cord or the plug has been damaged; or
- Objects have fallen, or liquid has been spilled into the appliance; or
- The appliance has been exposed to rain; or
- The appliance does not appear to operate normally or exhibits a marked change in performance; or
- The appliance has been dropped; or the enclosure damaged.

SERVICING — The user should not attempt to service the appliance beyond that described in the operating instructions. For all other servicing, contact the nearest Pioneer authorized service center.

OUTDOOR ANTENNA GROUNDING — If an outside antenna is connected to the antenna terminal, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges.

In the U.S.A. section 810 of the National Electrical Code, ANSI/NEPA No. 70-1981, provides information with respect to proper groundig of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Fig. A.

EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE INSTRUCTIONS

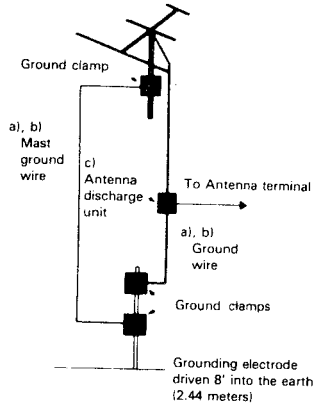


Fig. A

a) Use No. 10 AWG (5.3 mm²) copper or No. 8 AWG (8.4 mm²) aluminum or No. 17 AWG (1.0 mm²) copper-clad steel or bronze wire, or larger as ground wires for both mast and lead-in.

b) Secure lead-in wire from antenna to antenna discharge unit and mast ground wire to house with stand-off insulators, spaced from 4 feet (1.22 meters) to 6 feet (1.83 meters) apart.

c) Mount antenna discharge unit as closely as possible to where lead-in enters house.

IMPORTANT [FOR KU MODEL]

The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION:
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

IMPORTANT

To prevent electric shock, do not remove cover. No user serviceable parts inside, refer servicing to qualified service personnel. Always disconnect all the equipment from the mains supply when disconnecting the signal leads. The power cord should be connected last, make sure that the power switch is off.
Unplug the set from the wall socket when it is not to be used for an extended period of time.

FOR USE IN UNITED KINGDOM AND AUSTRALIA

CAUTION 240 V: **Mains supply voltage is factory adjusted at 240 V.**

FOR USE IN UNITED KINGDOM

The wires in this mains lead are coloured in accordance with the following cord:

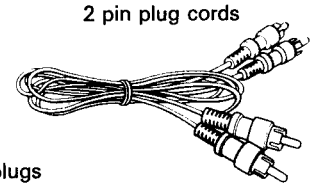
Blue:	Neutral
Brown:	Live

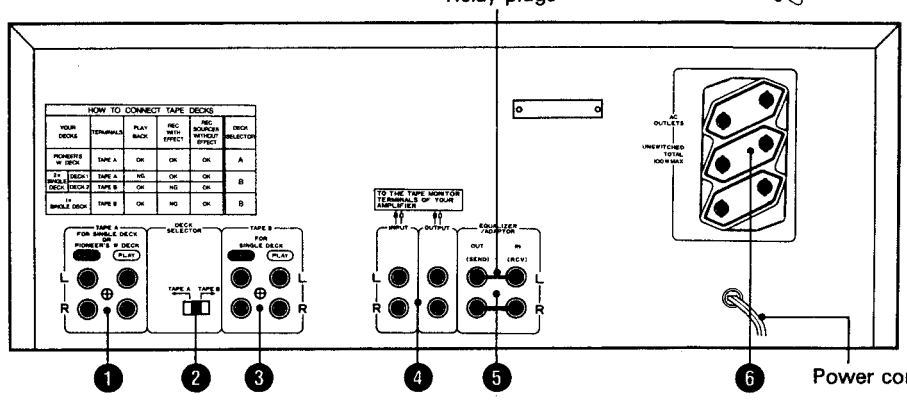
As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured marking identifying the terminals in your plug proceed as follows:
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

Equipment sold in the U.K. is not supplied with a power plug.

REAR PANEL FACILITIES

Two pin-plug cords are included as accessories. These are to be used to connect the sound processor to your stereo amplifier. The white plug is for the left channel, and the red plug is for the right channel.





❶ TAPE A TERMINALS (FOR SINGLE DECK OR PIONEER'S W DECK)

Use these terminals when connecting a single or double tape deck to the unit.

NOTE:
If a single tape deck is connected to these terminals and the deck selector switch is set to the "TAPE A" position, vibrations will result which could damage the deck. Such connections, therefore, should always be avoided.

❷ DECK SELECTOR SWITCH

Set this switch to the position that corresponds to the type of deck being used: set to "TAPE A" for a double cassette deck and to "TAPE B" for a single cassette deck.

❸ TAPE B TERMINALS (FOR SINGLE DECK)

Two single decks can substitute for a double cassette deck, and one of them can be connected to these terminals as the tape deck for the playback only. The other deck for recording is connected to the TAPE 1 terminals on the stereo amplifier. Recording and playback are possible with these tape decks.

Any mention of "double deck" in these instructions refers to the double deck made by PIONEER. It does not refer to any other decks since their functions are insufficient.

❹ MULTI MIXING INPUT/OUTPUT TERMINALS

These terminals are used to connect the stereo amplifier with the unit. Connect to the stereo amplifier's tape monitor terminals or to its ADAPTOR/TAPE 2 terminals. Use the ADAPTOR/TAPE 2 terminals when the unit is being used in combination with PIONEER's of stereo components.

❺ GRAPHIC EQUALIZER/ADAPTOR TERMINALS

Use these terminals when operating a graphic equalizer together with the unit. Disconnect the relay plugs when connecting.
Always keep the relay plugs connected when the terminals are not being used since no sound will be heard if they are disconnected.

❻ AC OUTLETS (UNSWITCHED TOTAL 100 W MAX)

Connect the power cords of stereo components to these outlets. Both are unswitched which means that the power supply to the components is not connected to the position of the POWER switch on the unit's front panel.

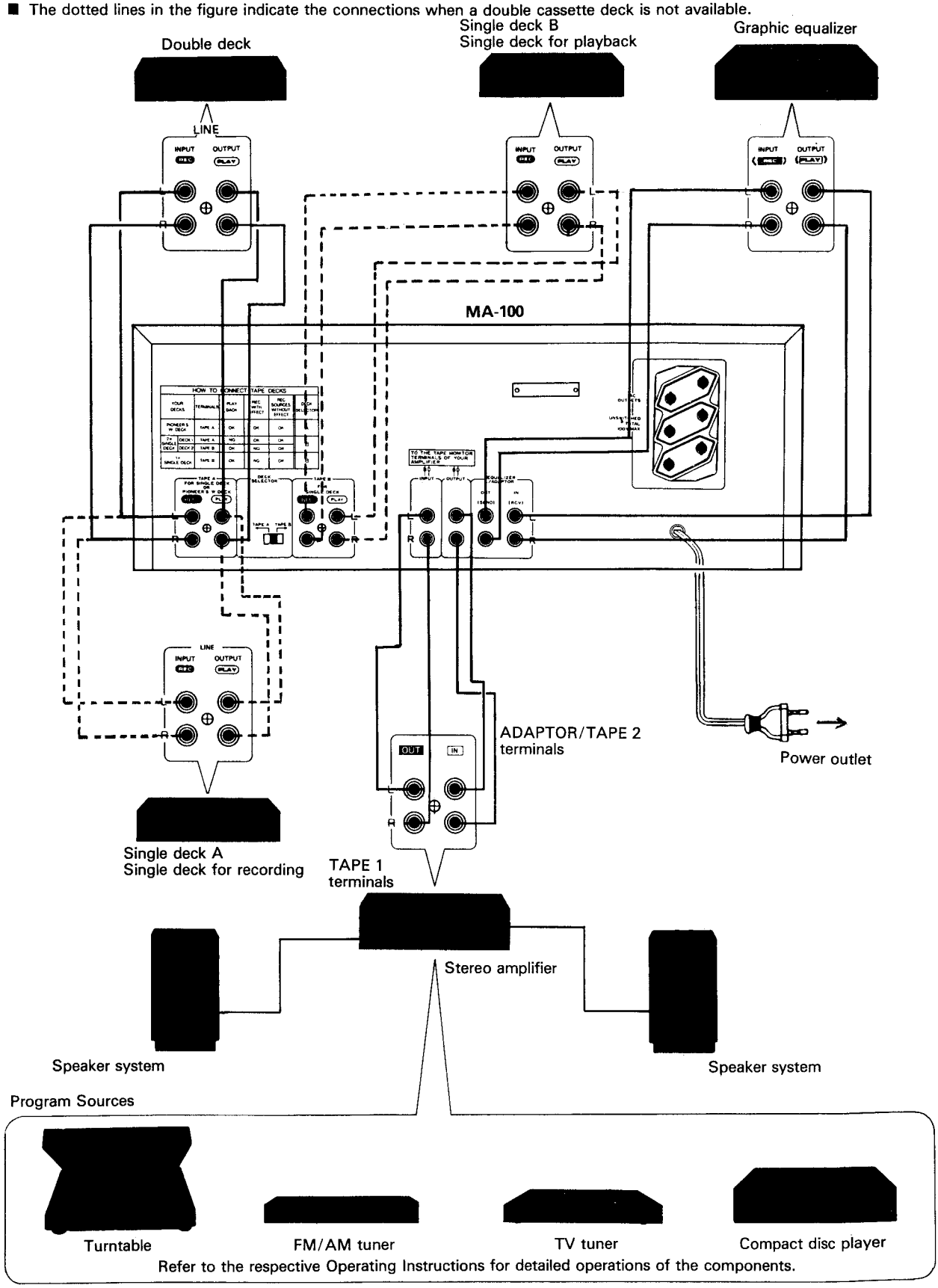
NOTE:
Under no circumstances should an electrical appliance (such as a toaster or hair dryer) with a power consumption exceeding the rating on the panel be connected to these outlets.

For details on the connections, refer to pages 4 and 5 .

ENGLISH

BASIC CONNECTIONS

■ The dotted lines in the figure indicate the connections when a double cassette deck is not available.

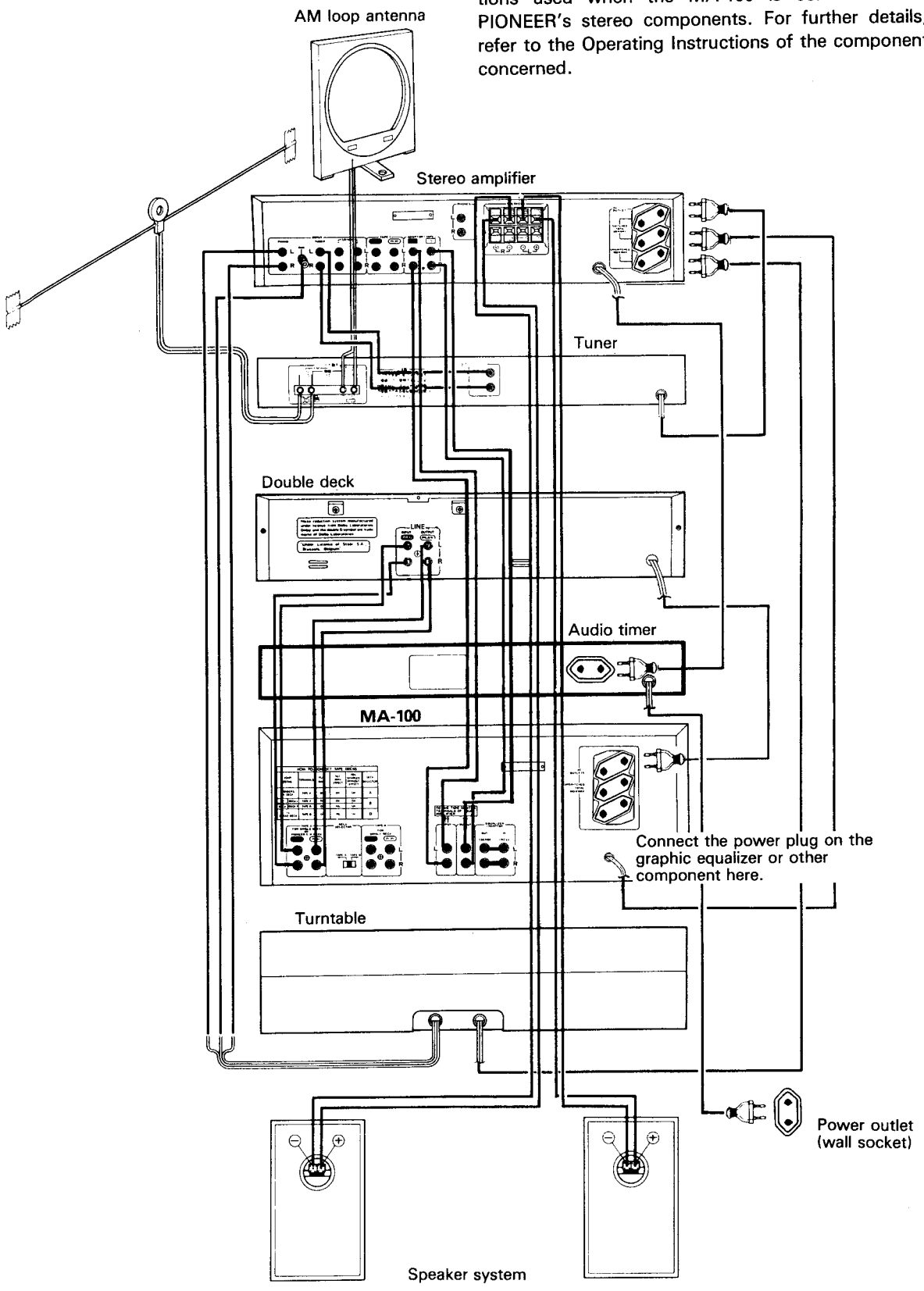


Refer to the respective Operating Instructions for detailed operations of the components.

SYSTEM CONNECTIONS

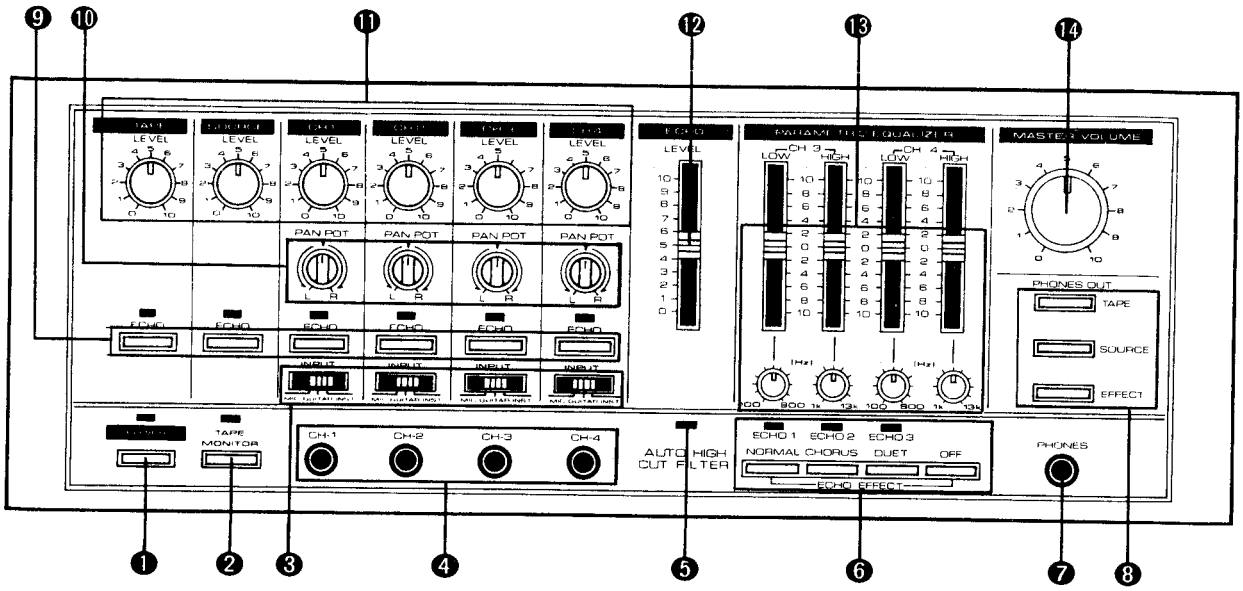
Ensure that the antenna is connected for radio reception.

This figure gives an example of the system connections used when the MA-100 is combined with PIONEER's stereo components. For further details, refer to the Operating Instructions of the component concerned.



ENGLISH

FRONT PANEL FACILITIES



❶ POWER SWITCH (POWER)

When this switch is set to the ON position, power is supplied to the unit's main circuits. The unit's power switch is geared to selecting the transformer's secondary and so even at the STAND-BY position, the unit's circuitry will work as long as the power cord is connected to the power outlet.
Disconnect the power cord from the power outlet when you do not plan to use the unit for a long period of time.

❷ TAPE MONITOR SWITCH

Set this switch to the position corresponding to the application.

OFF: For mixing play with the tape deck connected to the unit's tape terminals or for playing back the sound created.

ON: For playing back a tape in the tape deck connected to the unit's tape terminals without adding any effects.

NOTE:
Even when the unit's power switch is OFF, the tape playback sound is heard when the TAPE MONITOR switch is set to ON and the tape deck is set to the playback mode. In this case, the TAPE input level control should be set to the minimum "0" position. If it is set to a higher position, the sound may be distorted.

❸ INPUT SENSITIVITY SELECTOR SWITCHES

These are used to select the input sensitivity of the channels (1 — 4) in accordance with the output level of the musical instrument(s) or microphone(s) used.

MIC ..... Used for ordinary microphones
When using a vocal microphone or a microphone located at a distance from the sound source

GUITAR ... Used for an electric guitar or microphone
When using a microphone near an instrument with a high source of sound such as a drum or for using a highly sensitive microphone

INST ..... Used for a musical instrument such as electric piano or keyboard, etc.

❹ INPUT JACKS (CH-1, CH-2, CH-3, CH-4)

Connect the plugs on the microphone(s) and musical instrument(s) such as an electric guitar, to these jacks.

❺ AUTO HIGH CUT FILTER INDICATOR

When excessively high sound range components of an electric guitar or keyboard instrument, for instance, are supplied, this indicator lights and the high-cut filter that protects the speakers particularly the tweeters, is activated. When the indicator has come on, turn down the MASTER VOLUME control and reduce the input level so that the indicator does not light.

⑥ ECHO EFFECT SELECTORS (ECHO EFFECT)

Use these to select the type of echo effect.

ECHO 1 (NORMAL): For a normal echo effect.

ECHO 2 (CHORUS): For a chorus effect even though one person is singing. This is particularly effective with an electric guitar.

ECHO 3 (DUET) : For a duet effect even though one person is singing.

OFF: This selector releases the echo effect. When pressed, the echo effect for all the channels is turned off.

Try out the selector and find the best combinations that suit your particular purpose.

⑦ HEADPHONES JACK (PHONES)

Connect the headphones plug to this jack for monitoring the sound.

⑧ PHONES OUT SELECTORS (PHONES OUT)

These are used to select the mode (TAPE, SOURCE or EFFECT) which is to be monitored.

TAPE: For monitoring the playback sound of a tape deck connected to the unit.

SOURCE: For monitoring the sound of a program source (FM broadcast or record).

EFFECT: For monitoring the effects produced by operating this unit.

⑨ ECHO SWITCHES (ECHO)

These select the channel (TAPE, SOURCE, CH-1, CH-2, CH-3, CH-4) to which the echo effect is to be added.

When the ECHO EFFECT selector is OFF, the echo effect is released and the ECHO switches do not work.

⑩ PANPOT CONTROLS (CH-1, CH-2, CH-3, CH-4)

The sound of musical instruments or microphones input into CH-1 through CH-4 can be positioned exactly where desired using these controls from the left channel to the right channel or vice versa. Use the controls to move the position of the instrument or vocal sound images and record those images. For instance, if you are recording the whistle of a steam locomotive with a microphone, the locomotive will appear to run from left to right when the PANPOT control is rotated from L to R.

⑪ INPUT LEVEL CONTROLS

TAPE : This can adjust the input level of the sound played back on a tape deck connected to the unit's tape terminals.

SOURCE: This can adjust the input level of the program source such as an FM broadcast or record.

CH-1 — CH-4 : These can adjust the input level of the microphone(s) of musical instrument(s) connected to the input jacks CH-1 through CH-4 .

These controls are also used to attain the total balance during mixing operations.

NOTE:
When these controls are not being used, they should be kept at the "0" position.

⑫ ECHO LEVEL CONTROL

Use this to adjust the depth of the echo effect added to the channel(s) selected by the ECHO switch(es).

⑱ PARAMETRIC EQUALIZER CONTROLS

When these controls are operated, changes to the sound quality or coloring of the sound can be added only to the signals (microphone, electric guitar, etc.) input into CH-3 and CH-4.

The frequency to be adjusted is set by the bottom controls. When the top controls are moved above the "0" position, the sound range in each frequency band is emphasized; when they are moved below, it is attenuated.

NOTE:
Take care not to raise the volume of the stereo amplifier too high when boosting the treble range with this unit. Heed this caution to protect the speakers from excessively high input levels.

⑭ MASTER VOLUME CONTROL

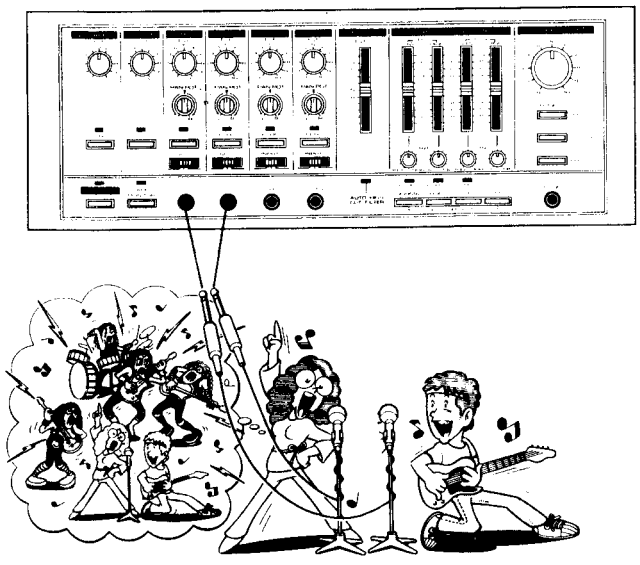
This is used to adjust the overall master volume level. The desired volume level is set with the volume control on the stereo amplifier and the overall output level is adjusted using the MASTER VOLUME control.

ENGLISH

HINTS ON SOUND CREATING

Generally, mixing involves mixing one sound (signal) with another sound to create a new sound.
For instance, a mixing operation could entail mixing the sound of a microphone with the sound of a tape or phonograph disc in a desired proportion. Singing along to background music is a typical example of mic mixing.

■ Mixing recording a "jam session" with your favorite musicians!



PREPARATIONS

- When mic mixing with a program source such as a record or a compact disc player, prepare the turntable or player for operation (by placing the disc on the platter and preparing the unit for play) and then select the stereo amplifier's function switch that corresponds to this source.
- When mic mixing with a tape, prepare the playback side (A) of the double cassette deck or the single deck player by loading the cassette tape and setting the deck to the playback standby mode, and then press the stereo amplifier's ADAPTOR/TAPE 2 switch.
  (For further details, refer to page 10 ~ 18.)

SOUND-CREATING TIPS

- When using an electric guitar, connect it to CH-3 or CH-4. Operating the PARAMETRIC EQUALIZER controls and increasing the treble will result in a vibrant and buoyant sound. Operating the ECHO 2 (CHORUS) EFFECT selector adds depth to the sound so that the electric guitar sounds more like a 12-string guitar.
- The echo effect comes into its own when a synthesizer is connected. Operating the NORMAL ECHO EFFECT selector switch adds charm to the sound.
- Lots more fun with creating sound can be had by connecting a rhythm machine to the input or by playing a record with only drum sound together.

OPERATION

[1] Set the tape deck or the turntable to the play mode. The sound can be monitored by connecting the headphones.
[2] Operate the input level controls to provisionally set the input level and set the tape deck and the turntable to the standby mode at the start of the desired program or track.
[3] Connect the microphone or the musical instrument(s) to the input jacks.
[4] Start play. Adjust the input level controls in line with the sound heard and determine the mixing proportion.
[5] Operate the parametric equalizer, echo controls and panpot controls to achieve the desired effect. The parametric equalizer controls can be adjusted only when signals are input into CH-3 and CH-4.
[6] Record the sound on the recording side (B) of the double deck or the recording single deck.

It is difficult to achieve the right timing and proportion of sound immediately with mic mixing. Try out various combinations until you achieve the desired effects.

USING THE ECHO EFFECT

When you sing in a bathroom or hall, you can sound almost professional—unlike the way you normally sound. This is due to the echo effect. The depth of the echo can be adjusted as desired with this unit. Three types of echo effect can be selected.

Making the most of the echo effect with a background music tape:

The important point to remember is to keep the sound volume of the background music tape to a level slightly lower than the vocals. This will result in well-balanced mixing and full use of the echo effect.

ECHO TYPES AND EFFECTS

NORMAL echo effect (ECHO 1)

Press this selector to add a normal echo to all the channels or to give added depth to the sound.

CHORUS echo effect (ECHO 2)

Press this selector to provide a chorus atmosphere even though one person only is singing. It is really effective for guitars.

DUET echo effect (ECHO 3)

Press this selector to provide a duet effect where it appears that two people are singing instead of one.

USING THE PANPOT CONTROLS

Depending on the position of the PANPOT controls, the input signals picked up by the microphone are distributed in the desired proportion between the left (L) and right (R) channel OUTPUT terminals of the MA-100.

- If the PANPOT controls are adjusted while a quartet is playing (as in Fig. A, with the piano on the left, the saxophone to the left of center, the drums to the right of center and the doublebass on the right), then the sound sources of the saxophone and drums move, as in Fig. B) so that the desired ambience is obtained.
- When a PANPOT control is rotated continuously from L to R, or vice versa, then the signals from the OUTPUT appear to move even without the source volume having been adjusted. For instance, as shown in Fig. C, upon playback the steam locomotive appears to run from left to right when its whistle is picked up by the CH-3 microphone and the PANPOT control is rotated from L to R.

HINTS ON MIXING

- An attenuation of about 6 dB is produced at the 7.5 setting of the MASTER VOLUME control, out of the 10 position. The signal-to-noise ratio may deteriorate when the MASTER VOLUME control is turned down too much and the input level of the tape deck or stereo amplifier connected to the OUTPUT terminals is raised. To prevent this, set the MASTER VOLUME to between "7" and "8", and then adjust the volume control on the stereo amplifier or the recording level control on the tape deck.
- The MA-100's headphone amplifier output is designed to reach its maximum before the output signals of the OUTPUT terminals become distorted. Signals with minimal distortion and a good signal-to-noise ratio can be obtained when the level of the input level controls is increased during mixing within a range where the signals do not become distorted when monitored with the headphones.

When the PANPOT controls are not used
(A)

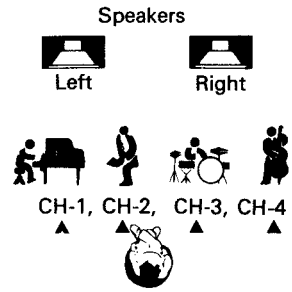


Fig. A

When the PANPOT controls are used
(B)

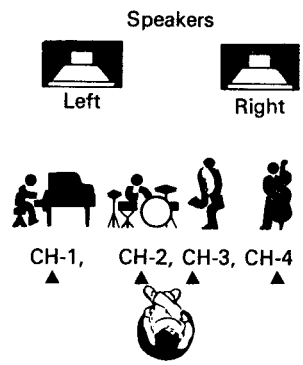
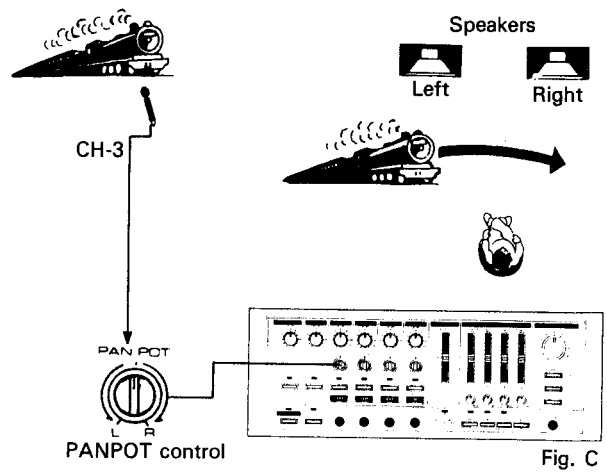


Fig. B



PANPOT control

Fig. C

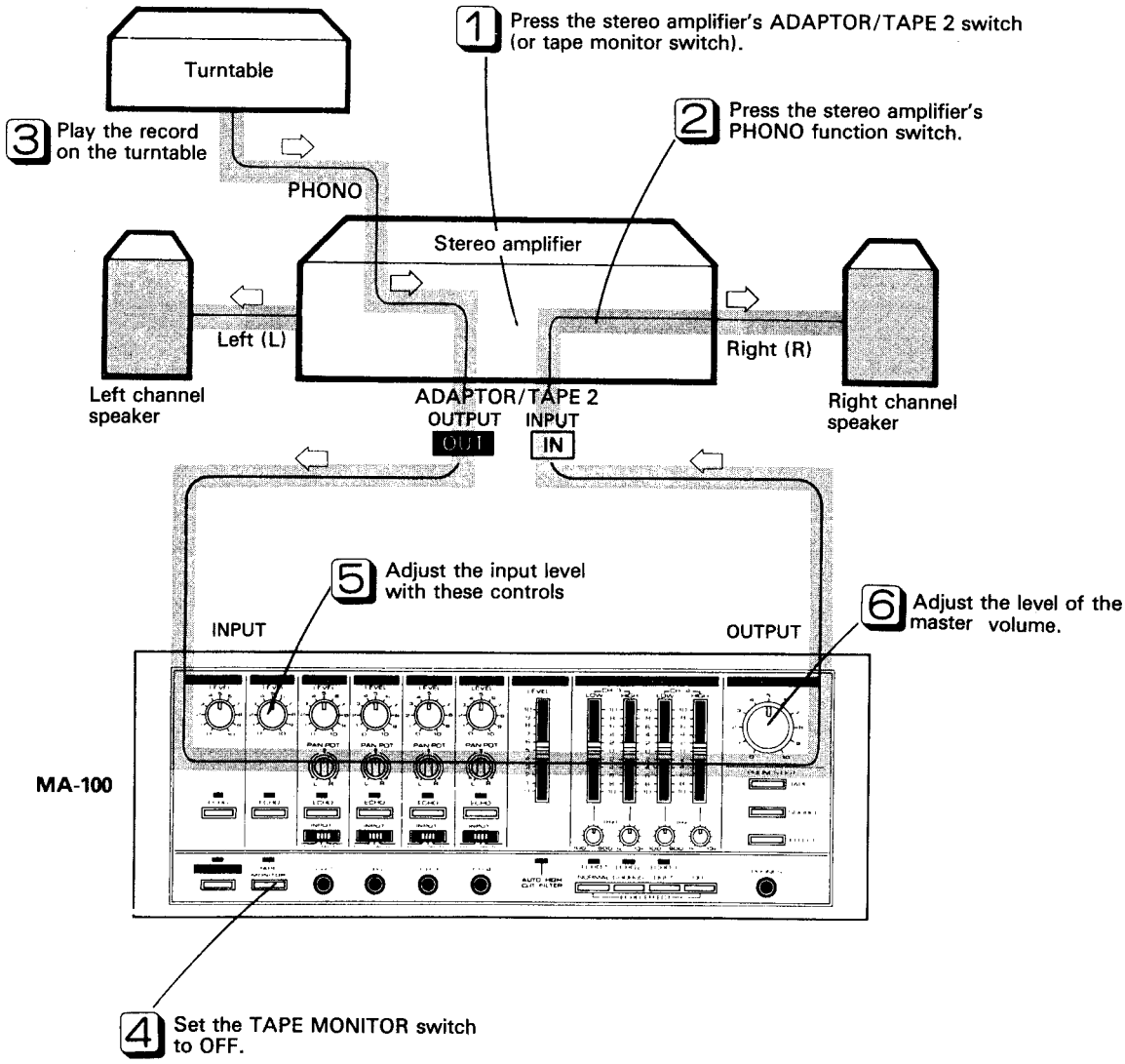
When the PANPOT control is rotated continuously, the locomotive appears to run from left speaker to right speaker.

ENGLISH

INDIVIDUAL APPLICATIONS

■ Playing a record in combination with the multi-mixing amplifier

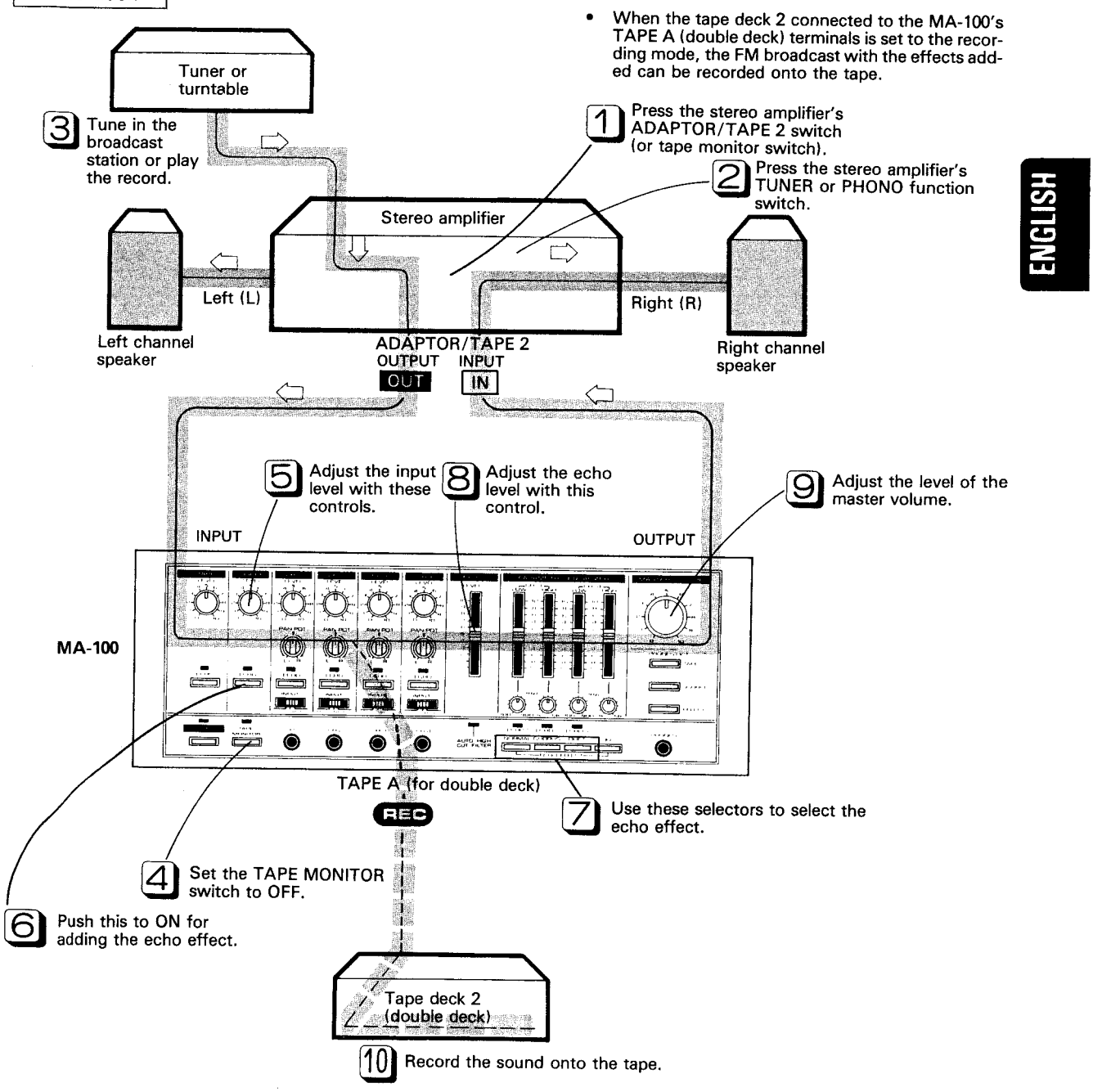
Follow the numerical sequence



■ Recording an FM program off-the-air or a record in combination with the multi-mixing amplifier

Follow the numerical sequence.

When using a double deck

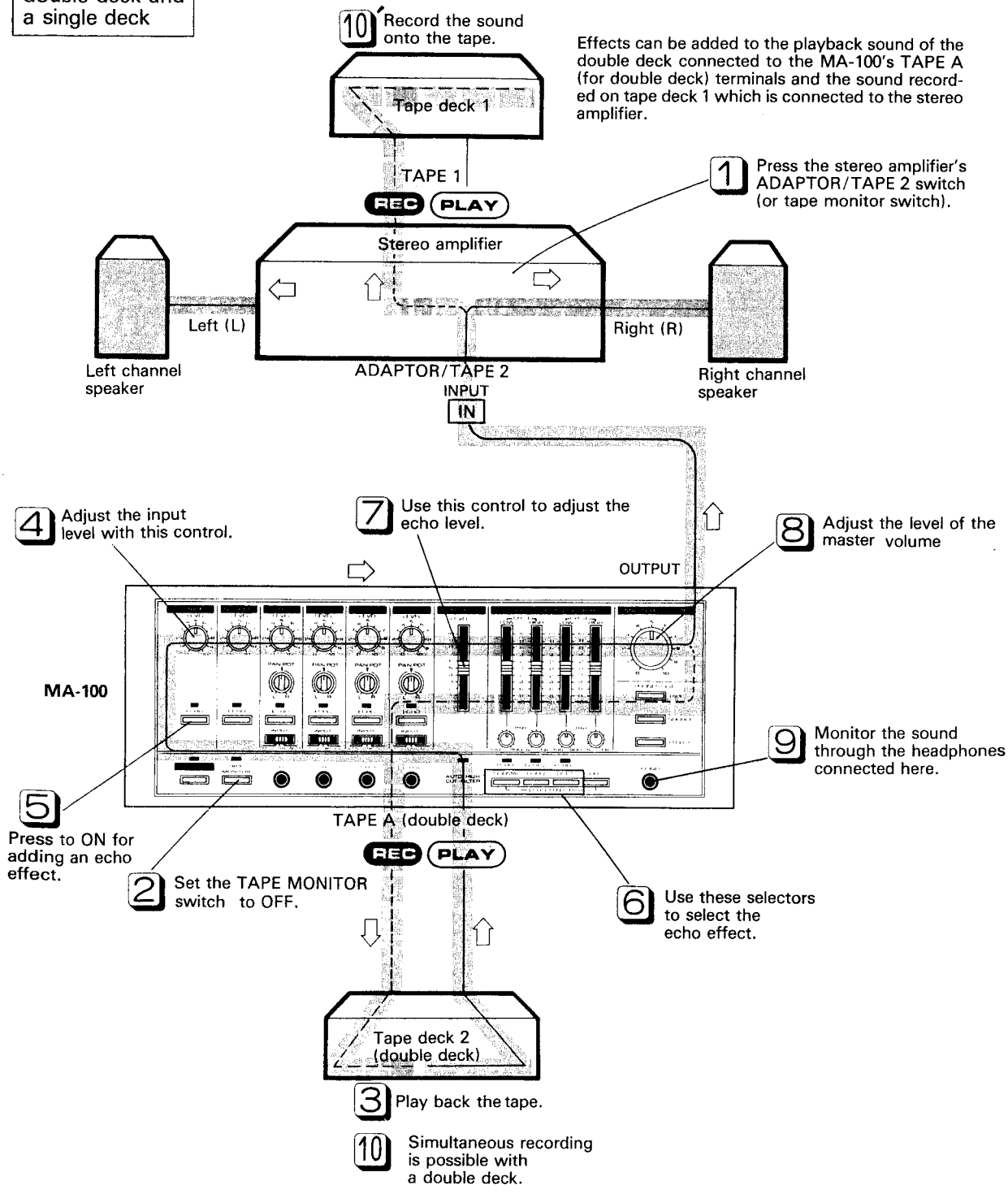

• When the tape deck 2 connected to the MA-100's TAPE A (double deck) terminals is set to the recording mode, the FM broadcast with the effects added can be recorded onto the tape.
Tuner or turntable
3 Tune in the broadcast station or play the record.
1 Press the stereo amplifier's ADAPTOR/TAPE 2 switch (or tape monitor switch).
2 Press the stereo amplifier's TUNER or PHONO function switch.
Stereo amplifier
Left (L)
Right (R)
Left channel speaker
Right channel speaker
ADAPTOR/TAPE 2
OUTPUT
OUT
INPUT
IN
5 Adjust the input level with these controls.
8 Adjust the echo level with this control.
9 Adjust the level of the master volume.
INPUT
OUTPUT
MA-100
TAPE A (for double deck)
REC
7 Use these selectors to select the echo effect.
4 Set the TAPE MONITOR switch to OFF.
6 Push this to ON for adding the echo effect.
Tape deck 2 (double deck)
10 Record the sound onto the tape.

ENGLISH

■ Playing back or editing a tape in combination with the multi-mixing amplifier

Follow the numerical sequence.

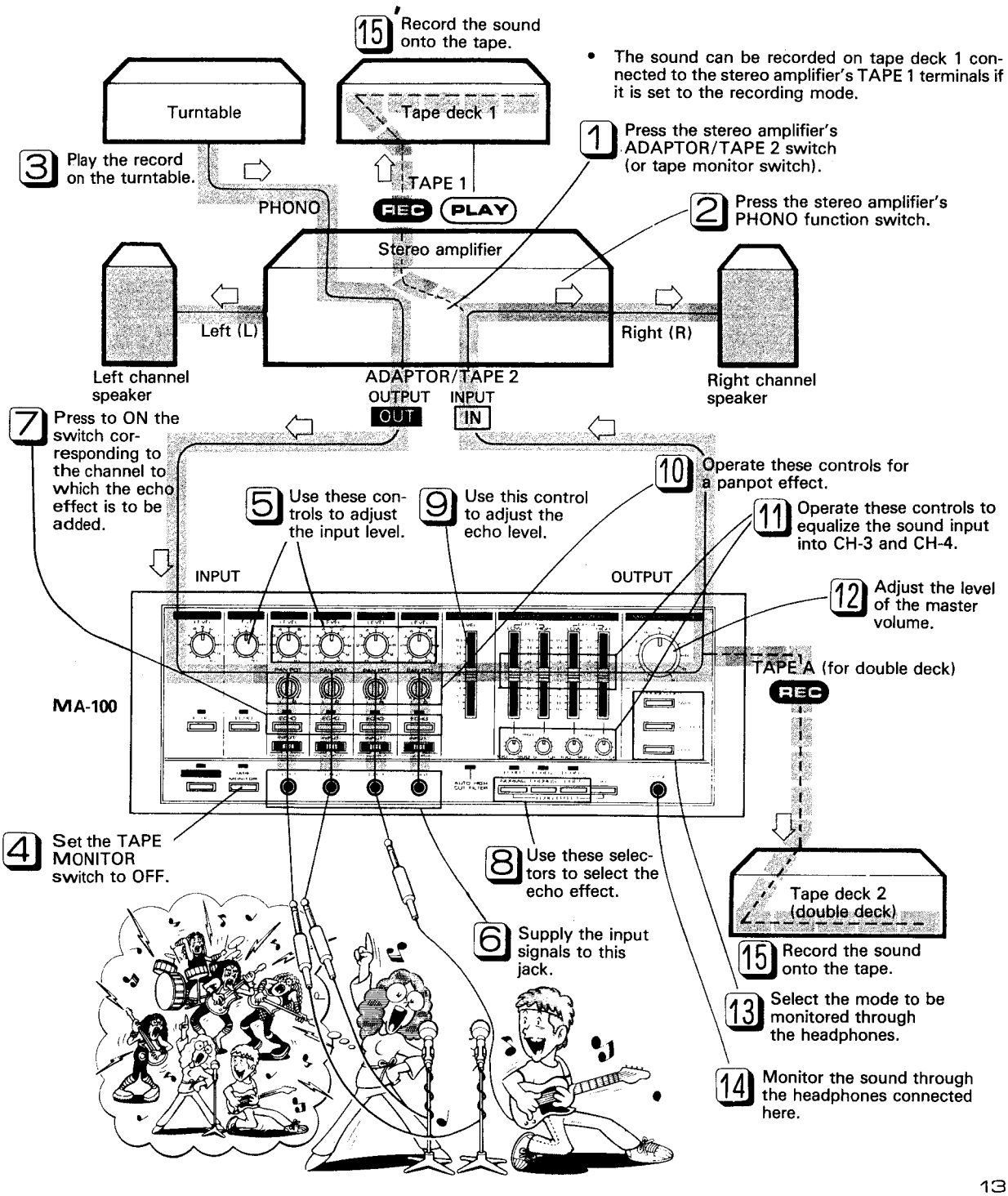
When using a double deck and a single deck


10 Record the sound onto the tape.
Effects can be added to the playback sound of the double deck connected to the MA-100's TAPE A (for double deck) terminals and the sound recorded on tape deck 1 which is connected to the stereo amplifier.
Tape deck 1
TAPE 1
REC PLAY
1 Press the stereo amplifier's ADAPTOR/TAPE 2 switch (or tape monitor switch).
Stereo amplifier
Left (L)
Right (R)
Left channel speaker
ADAPTOR/TAPE 2 INPUT IN
Right channel speaker
4 Adjust the input level with this control.
7 Use this control to adjust the echo level.
8 Adjust the level of the master volume
OUTPUT
MA-100
9 Monitor the sound through the headphones connected here.
5 Press to ON for adding an echo effect.
TAPE A (double deck)
REC PLAY
2 Set the TAPE MONITOR switch to OFF.
6 Use these selectors to select the echo effect.
Tape deck 2 (double deck)
3 Play back the tape.
10 Simultaneous recording is possible with a double deck.

■ Record play and mic mixing recording in combination with the multi-mixing amplifier

Follow the numerical sequence.

When using a double deck and single deck

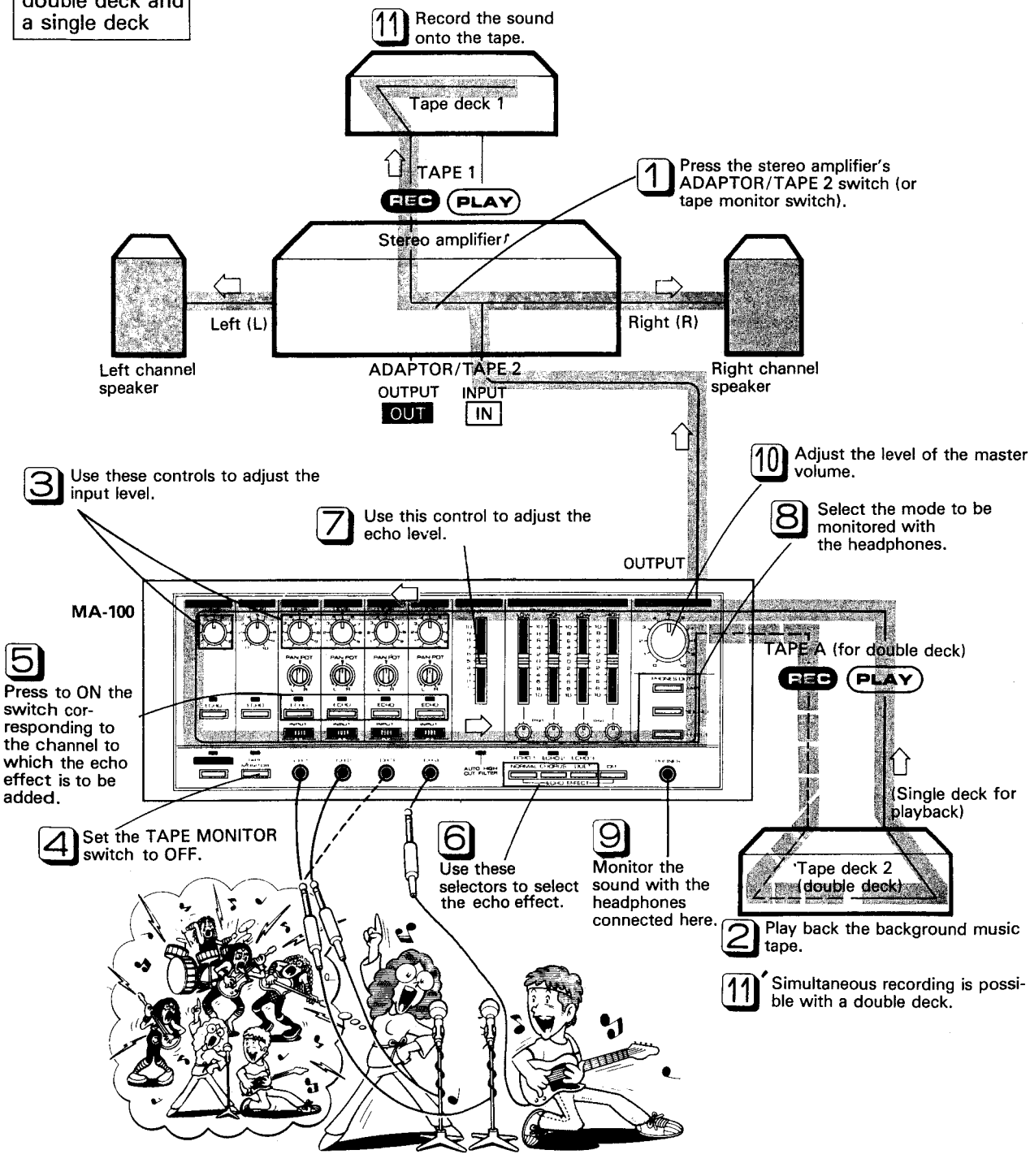

15 Record the sound onto the tape.
• The sound can be recorded on tape deck 1 connected to the stereo amplifier's TAPE 1 terminals if it is set to the recording mode.
Turntable
Tape deck 1
1 Press the stereo amplifier's ADAPTOR/TAPE 2 switch (or tape monitor switch).
3 Play the record on the turntable.
TAPE 1
PHONO
REC
PLAY
2 Press the stereo amplifier's PHONO function switch.
Stereo amplifier
Left (L)
Right (R)
Left channel speaker
ADAPTOR/TAPE 2
OUTPUT
INPUT
OUT
IN
Right channel speaker
7 Press to ON the switch corresponding to the channel to which the echo effect is to be added.
10 Operate these controls for a panpot effect.
5 Use these controls to adjust the input level.
9 Use this control to adjust the echo level.
11 Operate these controls to equalize the sound input into CH-3 and CH-4.
INPUT
OUTPUT
12 Adjust the level of the master volume.
TAPE A (for double deck)
REC
MA-100
4 Set the TAPE MONITOR switch to OFF.
8 Use these selectors to select the echo effect.
Tape deck 2 (double deck)
6 Supply the input signals to this jack.
15 Record the sound onto the tape.
13 Select the mode to be monitored through the headphones.
14 Monitor the sound through the headphones connected here.

ENGLISH

■ Playing a background music tape and mic mixing recording in combination with the multi-mixing amplifier

Follow the numerical sequence.

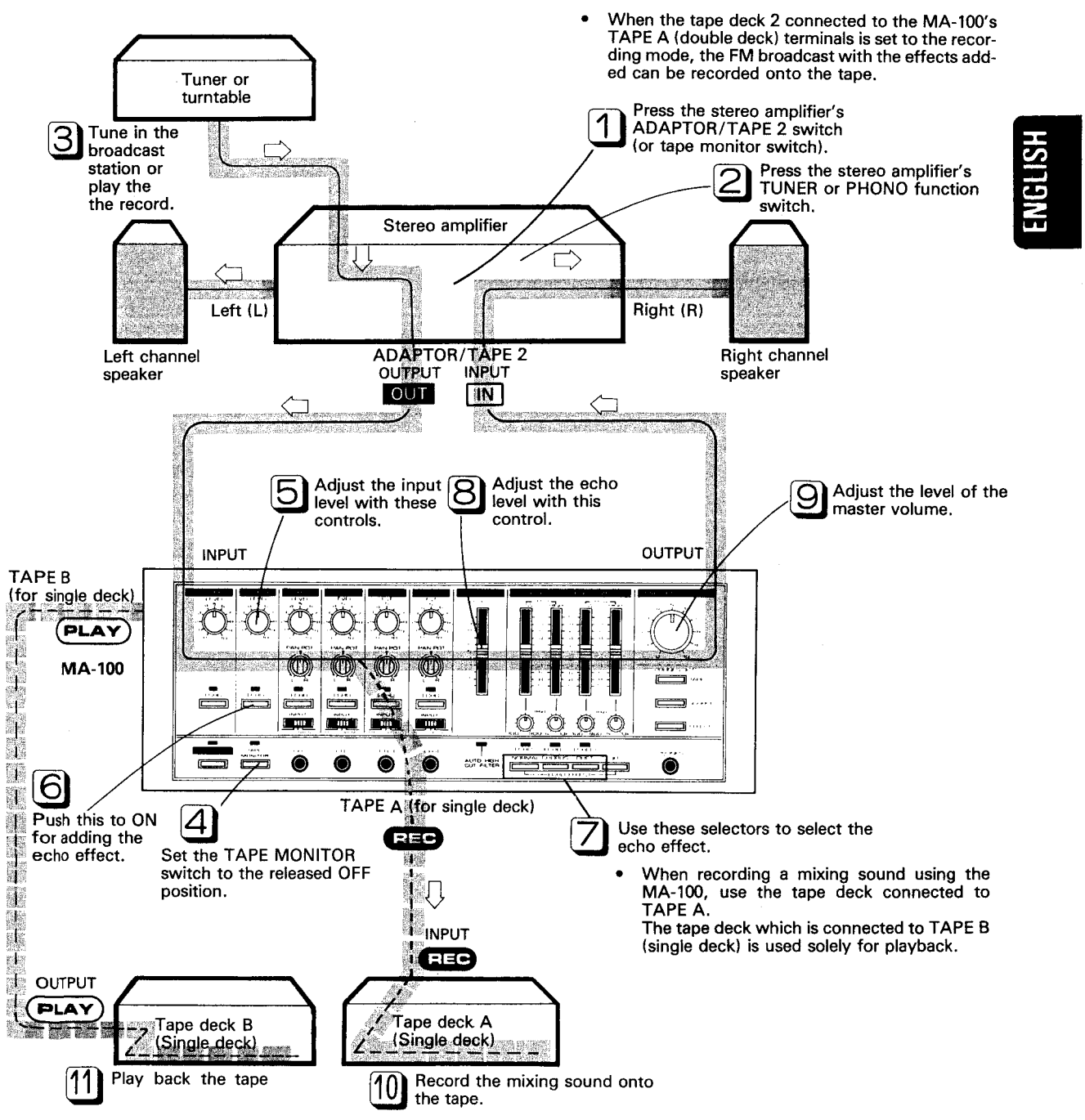
When using a double deck and a single deck


11 Record the sound onto the tape.
Tape deck 1
TAPE 1
REC PLAY
1 Press the stereo amplifier's ADAPTOR/TAPE 2 switch (or tape monitor switch).
Stereo amplifier
Left (L)
Right (R)
Left channel speaker
Right channel speaker
ADAPTOR/TAPE 2
OUTPUT
OUT
INPUT
IN
10 Adjust the level of the master volume.
3 Use these controls to adjust the input level.
7 Use this control to adjust the echo level.
8 Select the mode to be monitored with the headphones.
OUTPUT
MA-100
5 Press to ON the switch corresponding to the channel to which the echo effect is to be added.
TAPE A (for double deck)
REC PLAY
(Single deck for playback)
4 Set the TAPE MONITOR switch to OFF.
6 Use these selectors to select the echo effect.
9 Monitor the sound with the headphones connected here.
Tape deck 2 (double deck)
2 Play back the background music tape.
11 Simultaneous recording is possible with a double deck.

■ Recording an FM program off-the-air or a record in combination with the multi-mixing amplifier

Follow the numerical sequence.

When using two single decks


• When the tape deck 2 connected to the MA-100's TAPE A (double deck) terminals is set to the recording mode, the FM broadcast with the effects added can be recorded onto the tape.
Tuner or turntable
3 Tune in the broadcast station or play the the record.
1 Press the stereo amplifier's ADAPTOR/TAPE 2 switch (or tape monitor switch).
2 Press the stereo amplifier's TUNER or PHONO function switch.
Stereo amplifier
Left (L)
Right (R)
Left channel speaker
Right channel speaker
ADAPTOR/TAPE 2
OUTPUT
OUT
INPUT
IN
5 Adjust the input level with these controls.
8 Adjust the echo level with this control.
9 Adjust the level of the master volume.
INPUT
OUTPUT
TAPE B (for single deck)
PLAY
MA-100
6 Push this to ON for adding the echo effect.
4 Set the TAPE MONITOR switch to the released OFF position.
TAPE A (for single deck)
REC
7 Use these selectors to select the echo effect.
• When recording a mixing sound using the MA-100, use the tape deck connected to TAPE A.
The tape deck which is connected to TAPE B (single deck) is used solely for playback.
INPUT
REC
OUTPUT
PLAY
Tape deck B (Single deck)
Tape deck A (Single deck)
11 Play back the tape
10 Record the mixing sound onto the tape.

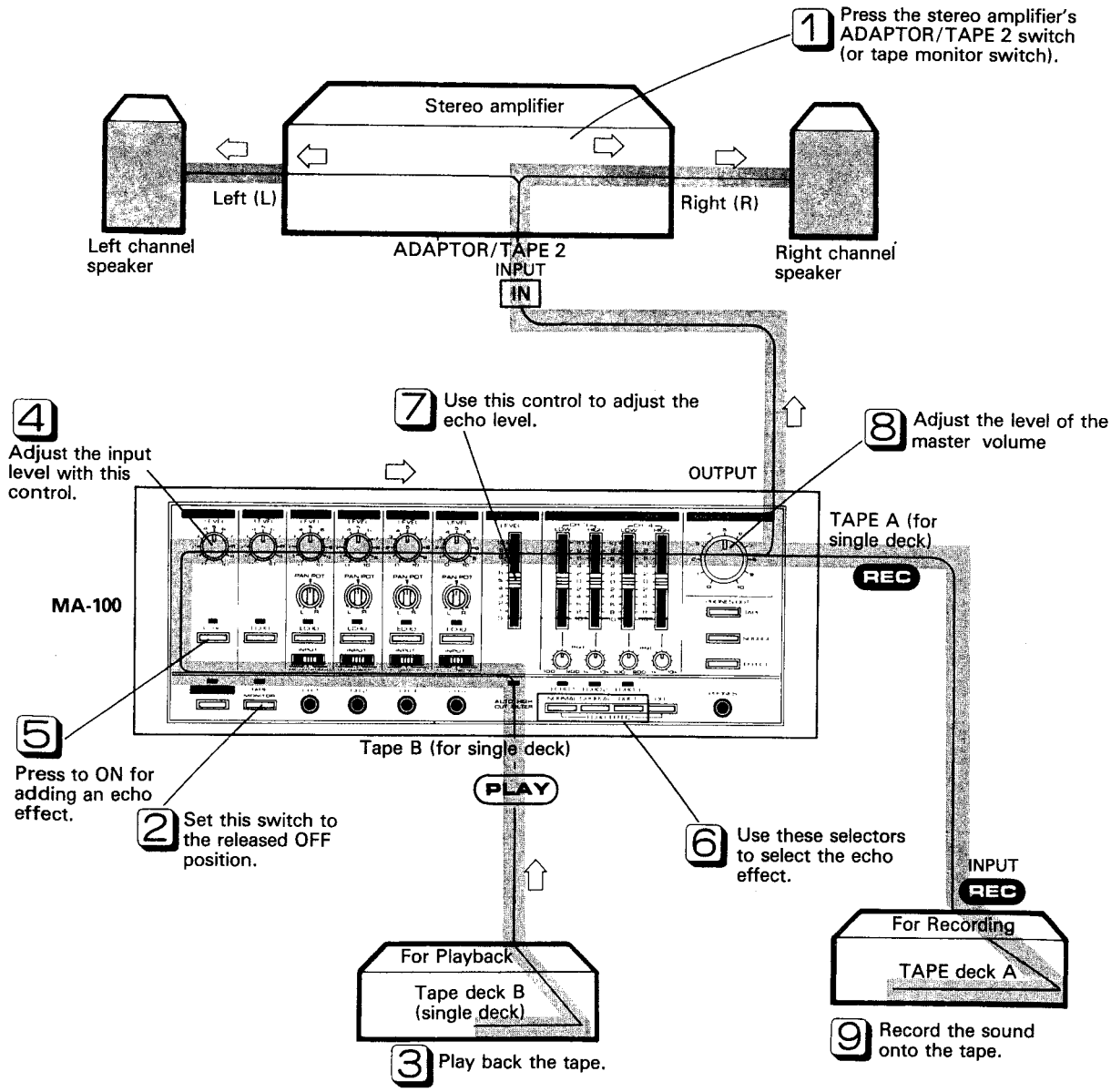
■ Playing back or editing (copying) a tape in combination with the multi-mixing amplifier

Follow the numerical sequence.

When using two single decks

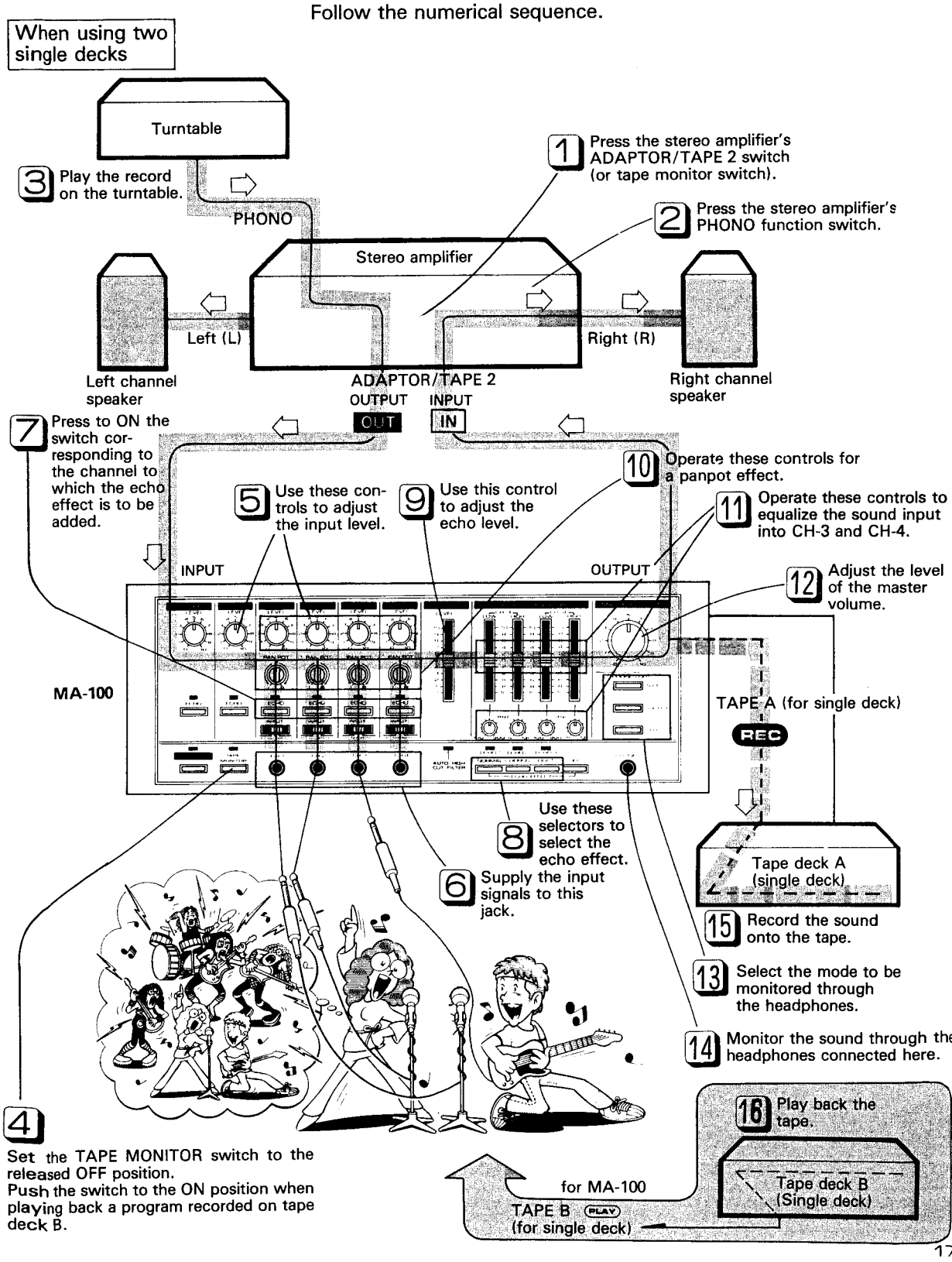
Copying from TAPE 2 to 1

- As a rule, when tape copying using 2 single decks, the recording should be done by playing back the sound from B to A.
  Recording from A to B is not possible.


1 Press the stereo amplifier's ADAPTOR/TAPE 2 switch (or tape monitor switch).
Stereo amplifier
Left (L)
Right (R)
Left channel speaker
Right channel speaker
ADAPTOR/TAPE 2 INPUT
IN
4 Adjust the input level with this control.
7 Use this control to adjust the echo level.
8 Adjust the level of the master volume
OUTPUT
TAPE A (for single deck)
REC
MA-100
5 Press to ON for adding an echo effect.
Tape B (for single deck)
PLAY
2 Set this switch to the released OFF position.
6 Use these selectors to select the echo effect.
INPUT
REC
For Recording
TAPE deck A
For Playback
Tape deck B (single deck)
9 Record the sound onto the tape.
3 Play back the tape.

■ Record play and mic mixing recording in combination with the multi-mixing amplifier

Follow the numerical sequence.


When using two single decks
Turntable
3 Play the record on the turntable.
PHONO
1 Press the stereo amplifier's ADAPTOR/TAPE 2 switch (or tape monitor switch).
2 Press the stereo amplifier's PHONO function switch.
Stereo amplifier
Left (L)
Right (R)
Left channel speaker
Right channel speaker
ADAPTOR/TAPE 2
OUTPUT
INPUT
OUT
IN
7 Press to ON the switch corresponding to the channel to which the echo effect is to be added.
5 Use these controls to adjust the input level.
9 Use this control to adjust the echo level.
10 Operate these controls for a panpot effect.
11 Operate these controls to equalize the sound input into CH-3 and CH-4.
12 Adjust the level of the master volume.
INPUT
OUTPUT
MA-100
TAPE A (for single deck)
REC
8 Use these selectors to select the echo effect.
6 Supply the input signals to this jack.
Tape deck A (single deck)
15 Record the sound onto the tape.
13 Select the mode to be monitored through the headphones.
14 Monitor the sound through the headphones connected here.
16 Play back the tape.
Tape deck B (Single deck)
for MA-100
TAPE B PLAY (for single deck)
4 Set the TAPE MONITOR switch to the released OFF position. Push the switch to the ON position when playing back a program recorded on tape deck B.

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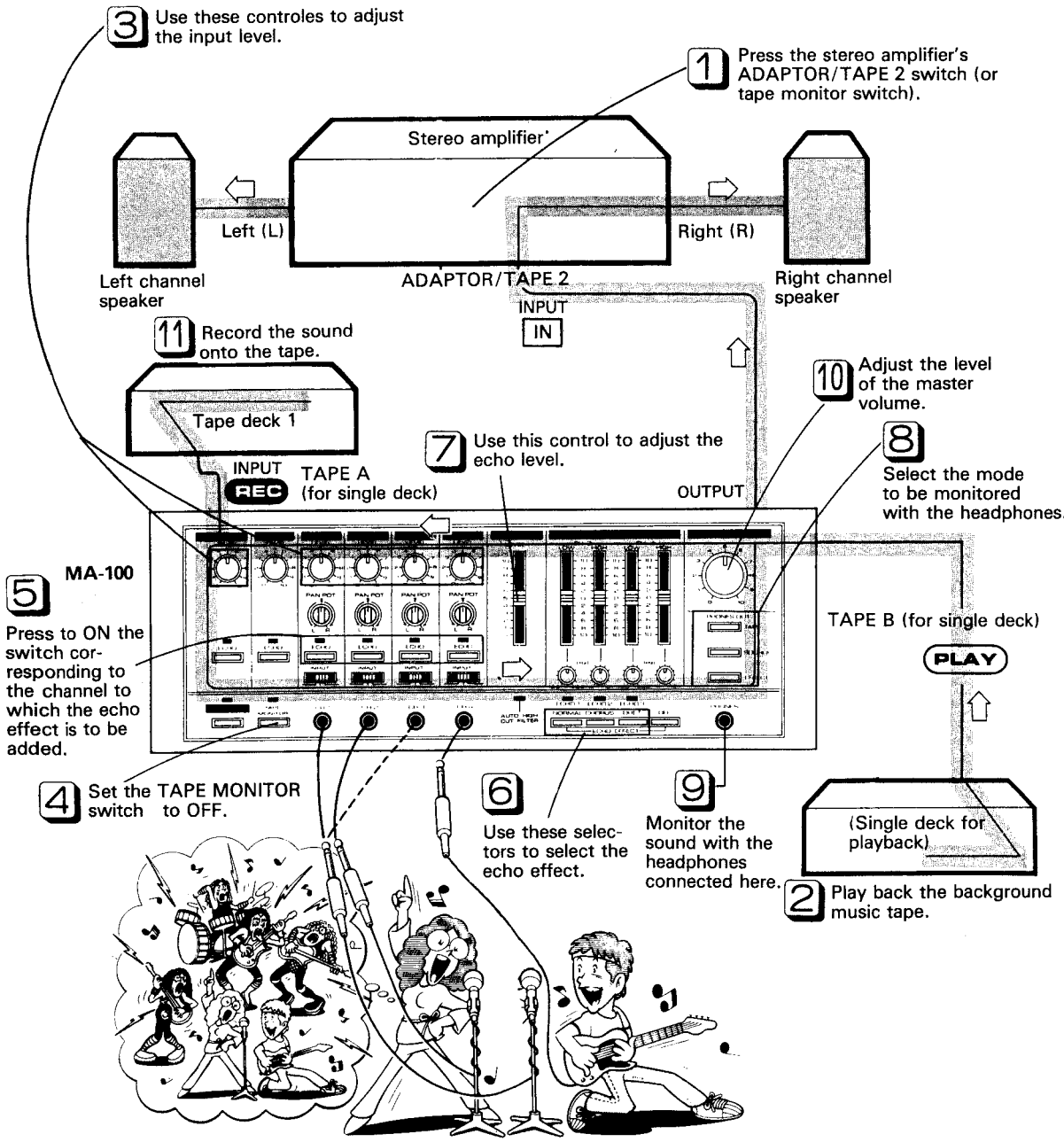
■ Playing a background music tape and mic mixing recording in combination with the multi-mixing amplifier

Follow the numerical sequence.

When using two single decks


3 Use these controles to adjust the input level.
1 Press the stereo amplifier's ADAPTOR/TAPE 2 switch (or tape monitor switch).
Stereo amplifier
Left (L)
Right (R)
Left channel speaker
Right channel speaker
ADAPTOR/TAPE 2
INPUT
IN
11 Record the sound onto the tape.
Tape deck 1
10 Adjust the level of the master volume.
7 Use this control to adjust the echo level.
8 Select the mode to be monitored with the headphones.
INPUT
REC
TAPE A (for single deck)
OUTPUT
5 MA-100
Press to ON the switch corresponding to the channel to which the echo effect is to be added.
TAPE B (for single deck)
PLAY
4 Set the TAPE MONITOR switch to OFF.
6 Use these selectors to select the echo effect.
9 Monitor the sound with the headphones connected here.
(Single deck for playback)
2 Play back the background music tape.

TROUBLESHOOTING

If you think that something has gone wrong with your unit, check out the points below before calling in the serviceman.
The cause of the trouble may lie in improper maintenance or operation.
If the trouble is still not remedied even after the checks have been carried out, contact your nearest PIONEER service center.

Trouble	Possible Cause	Remedy
No sound from speakers.	1. Power switch is OFF. 2. Disconnected power cord. 3. TAPE MONITOR switch is ON. 4. Disconnected connecting cord from input/output terminal. 5. Stereo amplifier's ADAPTOR/TAPE 2 is OFF. 6. TAPE or SOURCE input level control is "0". 7. Stereo amplifier's volume control or MA-100's master volume control is "0".	1. Set to ON. 2. Re-connect properly. 3. Set to OFF. 4. Connect cord's pin plugs properly. 5. Set to ON. 6. Adjust input level control (TAPE, SOURCE). 7. Rotate control clockwise slightly.
No multi mixing.	1. MA-100's TAPE MONITOR switch is ON. 2. Input level controls is "0". 3. Faulty input terminal connection.	1. Set to OFF. 2. Adjust SOURCE or TAPE input level control and microphone's input level. 3. Connect properly.
No echo effect.	1. ECHO switch not pressed. 2. ECHO EFFECT selectors are OFF.	1. Press switch of channel requiring echo effect. 2. Select type of echo with ECHO EFFECT selector.

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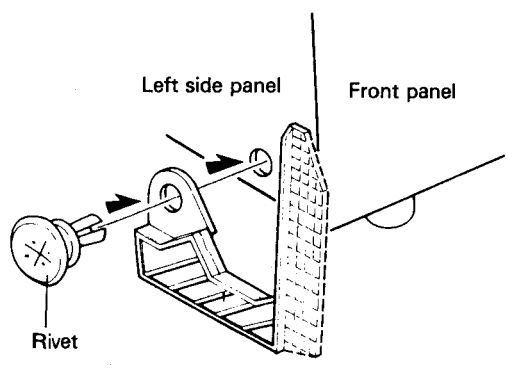
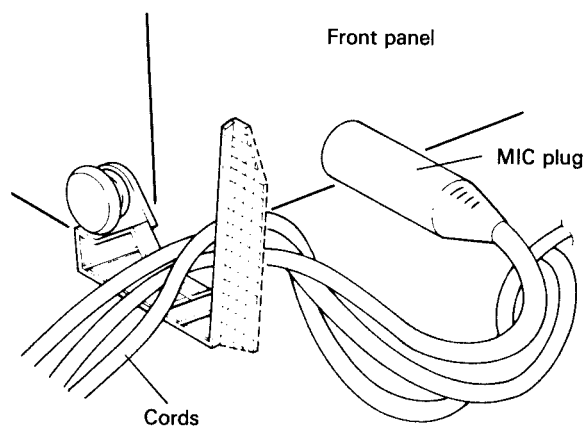
USING THE CORD HOLDER

■ As shown in the figure below, place the cord holder against the left panel of the MA-100, taking care to align the holes. Then pass the rivet marked with an asterisk (*) through the holes to secure.



■ As shown in the figure below, pass all the cords connected to the front panel over the cord holder, and secure.



SPECIFICATIONS

INPUT(Sensitivity/Impedance)

- 150 mv output setting, max. master volume

SOURCE INPUT, TAPE PLAY, GRAPHIC INPUT ..... 85 mv/50 kohms
CH-1—CH-4 MIC ..... 0.4 mv/50 kohms
GUITAR ..... 4 mv/50 kohms
INST ..... 38 mv/50 kohms

OUTPUT

SOURCE OUTPUT ..... 150 mv/600 ohms
TAPE REC ..... 85 mv/2.2 kohms
GRAPHIC OUT ..... 85 mv/600 ohms
Rated Distortion
(1.5 V output, 1 kHz) 0.008%
Gain
SOURCE, TAPE ..... +5 dB
MIC, CH-1 — CH-4 .....
51 dB (0.4 mv/50 kohms)
GUITAR ..... 31 dB (4 mv/50 kohms)
INST ..... 12 dB (38 mv/50 kohms)
Parametric Equalizer Level ..... ±10 dB
Parametric Equalizer Frequency Band .....
LOW; 100 Hz — 900 Hz
HIGH; 1 kHz — 13 kHz
Noise (1 V Converted S/N)
SOURCE, TAPE ..... 83 dB
MIC, GUITAR, INST (CH-1 — CH-4) ..... 75 dB
Echo Time ..... Max 3 sec

Frequency Response (−3 dB point)
CH-1 — CH-4 ..... MIC; 150 Hz — 20 kHz
GUITAR, INST; 30 Hz — 20 kHz
TAPE, SOURCE; 10 Hz — 80 kHz $^{+0}_{-3}$ dB

Miscellaneous

Power Requirements ..... a.c. 220 Volts ~, 50/60 Hz
Power Consumption ..... 12 W
Dimensions ..... 420(W) x 158(H) x 227(D) mm
Weight ..... 4.2 kg

Furnished Parts

Connecting cords with pin plugs 2
Cord holder 1
Operating Instructions 1

NOTE:
Specifications and design subject to possible modification without notice for improvement.

BLOCK DIAGRAM